AUGUST 1990

THE DATA PROCESSING AND NETWORK FM MARKET

A STRATEGIC ASSESSMENT

A STUDY FOR BRITISH TELECOM

INPUT®

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Abstract

This report documents a study carried out in April 1990 for British Telecom. The study objective was to provide an overall assessment of the market for facilities management (FM) services for data processing and networks. The primary focus of the study was the U.K. market, but information about FM services in continental Europe and the world is also included in the report.

The report contains market sizes and forecasts for the FM market and describes the structure of the market and the various forces acting upon it. Specifically the report describes the relationship between network and data processing FM, and the user expenditure on these services. The likely evolution of this market over the next five years is also discussed. An analysis of known FM contracts in the U.K. is included.

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I

Introduction

I

Introduction

A

Objective

The overall objective of this study is to provide an assessment of the Data Processing (DP) and Network Facilities Management (FM) market on an international scale.

B

Scope

Specifically the study aims to gather relevant facts and information concerning these markets in order to provide an assessment of

- The relationship between network FM and DP FM to determine whether these are linked or separately accessible markets.
- The likely evolution of this market (especially FM Network) over the next five years.
- Identification of the expenditure ratio between network and DP in FM contracts.

The geographic coverage places emphasis first on the U.K. market, secondly on Continental Europe, and lastly on the worldwide perspective.

C

Methodology

This study was based on desk research using INPUT's library and information files and in particular on INPUT's ongoing research into computer services markets. In discussions with BT, INPUT also developed marketing positioning graphics to aid the interpretation of the market.

D

Report Summary

The Facilities Management (FM) market represents a significant high-growth opportunity for service organisations, not just for data processing (DP) FM, but also for network FM. This study provides an assessment of the relationship between these two adjacent markets and an evaluation of their expected development over the next five years.

Facilities management is an important manifestation of outsourcing, a concept INPUT distinguishes from the provision of computer services in general. Outsourcing implies the subcontracting of management control for information services and thus represents a strategic decision on the part of the user.

FM has now existed as a concept for 20 years, having originated in the US in the late 1960s. The U.S. is now the most developed FM market in the world, accounting for approximately two-thirds of the world total. Japan is also a significant market, accounting for about one-fifth of the total. Europe has remained relatively undeveloped and accounts for only 9% of the world market.

Within the U.K. market for DP FM, Hoskyns is undoubtedly the market leader with a 60% market share. Other leading service companies such as Datasolve, EDS, SD-Scicon and SEMA provide competition. The U.K. market witnessed a resurgence of interest in FM in 1989 with the placement of significant FM contracts (VARITY with the Sema Group and Plessey with Hoskyns) and the entry of new participants like Andersen Consulting and Computer Sciences (CSC).

One of the objectives of the study was to develop a better understanding of the market positioning of FM through the analysis of user selection parameters. The key user selection factors emerged as the following:

- The target activity must be sufficiently separate for an FM solution to be practical.
- The vendor must be able to demonstrate superior knowledge and expertise in the chosen service area.
- The vendor must be able to demonstrate a cost advantage over the in-house solution.
- FM must be attractive as an option. Attractive means that users retain the unique strategic features of their own businesses, which represents their value-added rationale.

Another important factor in the development of the FM market was the users' increasing tendency to take less interest in the operational issues of information systems and place more emphasis on the applications. The implication is that users will tend to find FM an increasingly attractive option.

The market analysis revealed that DP and Network FM represented under 1% of total user expenditure on information systems, thus underpinning the possibility of considerable growth potential in the future.

The past development of the FM market has featured vendor entry into the data processing sector from a processing services (bureau) operation or from professional services activities. The development, in particular of systems integration services, has led to a greater need for involvement in operational support. EDS, for example, stresses the need for close coupling of systems integration services and operations.

Considerable interest in FM is now emanating from network service provision. British Telecom itself, Racal, Mercury (with its Corporate Data Network) and Andersen Consulting's arrangement with Motorola Codex are important examples of entrants to the nascent network FM market.

INPUT has assessed the overall European FM market at $1 billion in 1989, of which 85% is attributed to the DP category and 15% to the network category. Growth for both these markets is anticipated to be at a significantly higher rate than for the market as a whole. Total user expenditure for information systems (in-house and all services) is forecast to grow at a compound annual growth rate of 12% to 1994. In contrast, DP FM is expected to grow 20% per annum and network FM 40% over this period.

In conclusion INPUT believes that the network FM market is directly accessible and not reliant on the DP FM entry point. INPUT anticipates far greater penetration of the network market by FM contractors in percentage terms than for DP. Approaching the FM market from the route of applications provision and support is considered to be the most difficult since this is the area where the most management resistance to FM is likely. The most attractive route appears to be via the provision of other network services, notably the adjacent markets of data transmission and equipment maintenance.

E
Report Structure

The remaining chapters of this report are organised as follows:

- Chapter II contains an Executive Overview, which provides a concise summary of the entire report.
- Chapter III describes the background and rationale behind outsourcing and the current size of the data processing FM market.
- Chapter IV examines the dynamics of the FM market and reviews the various forces acting on the development of DP and network FM using two basic positioning diagram formats.
- Chapter V reviews the competitive environment, the evaluation of the network FM market and the evolution of the whole FM market in Europe over the next five years.
- Chapter VI summarises the key conclusions resulting from this study.
- The appendixes contain an analysis of known U.K. FM contracts and the proposal to BT for this project.

II

Executive Overview

II

Executive Overview

This chapter provides a concise summary of the complete report and corresponds to the material used in the presentation of this study to British Telecom on Friday, April 27th, 1990.

A

An Assessment of the DP and Network FM Market

The facilities management (FM) market represents a significant high-growth opportunity for service organisations, not just for data processing (DP) FM, but also for network FM.

This study provides an assessment of the relationship between these two adjacent markets and an evaluation of their expected development over the next five years. The structure of this material, as listed in Exhibit II-1, is as follows:

EXHIBIT II-1

An Assessment of the DP and Network FM Market

- Outsourcing
- Positioning
- Market development
- Conclusions

- Firstly, the general background of the origins of FM is discussed. FM is a manifestation of the phenomenon of outsourcing—the deliberate and specific use of an outside contractor to supply a strategic service component. A distinction is therefore made between outsourcing computer services like FM and systems integration, and supportive services like programming resources or processing services (bureau). The overall size of the FM market is discussed.

- Secondly, positioning is addressed. Positioning was a central part of this study, the analysis of industry parameters that would enable the role of FM to be positioned in relation to other services and thus enlighten an interpretation of the market.

- Thirdly, the anticipated development of this market is discussed: the observed activity of participating vendors, an assessment of the relative sizes of the DP and Network FM markets in Europe and their evolution over the next five years.

- Finally, conclusions are made in respect to the recommended approaches for exploiting the FM opportunity.

B

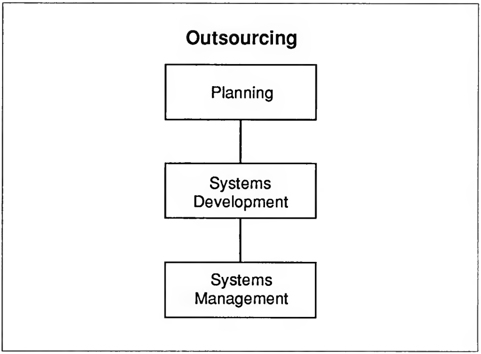
Outsourcing

The development of FM can best be interpreted within the overall context of outsourcing. Outsourcing can be used as a term to describe the purchase of all services. In this study INPUT preferred to restrict outsourcing's use to the supply of services that can be described as strategic. This is a difficult distinction to pin down precisely, but it is certainly a most important one. There exists a very different mindset or business approach between what motivates a company to hire contract programmers or operators and what leads to the contracting-out of a company's entire (or a substantial proportion of its) data processing activities.

Exhibit II-2 depicts the potential range of outsourcing services for an organisation's information systems activities. At the planning stage, consulting services might be used at the strategic level. As these plans are developed into systems, outsourcing is manifested as systems integration contracts, and the service vendor takes on total responsibility for the development and implementation of a complete information systems solution. Once systems are up and running, their ongoing management represents an FM outsourcing opportunity.

FM has existed as a concept for 20 years. It originated in the U.S. in the late 1960s and is generally associated with Ross Perot, who founded EDS. Characteristically, FM is an option for the large organisation because it is in this area that the user can most likely save and the supplier profit.

EXHIBIT II-2



C

The World Market

The most developed FM market in the world is undoubtedly that of the United States as shown in Exhibit II-3. The Japanese market is also substantial, particularly in relation to Europe, which has remained historically underdeveloped.

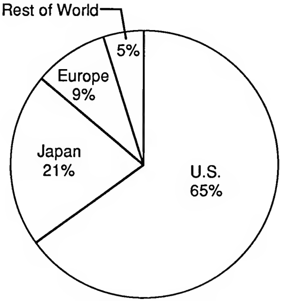
However, 1989 witnessed an increasing interest in the FM market in Europe, particularly in the U.K. This increase was marked by the placement of significant FM contracts—for example, that for VARITY with Data Networks PLC. Of significance was the entry into the market by such organisations as Andersen Consulting and CSC alongside the traditional vendors, Hoskyns and EDS.

This activity took place against a resurgence of activity in the much more developed U.S. market. IBM's market entry with a major FM contract with Kodak and the deal for EDS to run and take part ownership in Texas Air's System One airline reservation system were particularly notable.

There is undoubtedly a strong service orientation amongst US management and a much greater willingness (compared to European management) to utilise third-party services for information systems. Consequently it is not surprising overall that the more extreme forms of service like FM have been more slowly accepted in Europe.

EXHIBIT II-3

The World Market—Data Processing FM



1989 = $9.1 Billion

D

The European Market

Within Europe, the United Kingdom is undoubtedly the most strongly developed market; its share of the European market is shown in Exhibit II-4. Hoskyns has been and still is the market leader with around a 60% market share. Other leading service companies such as Datasolve, SD-Scicon and Sema (Data Networks PLC) all have lesser market positions.

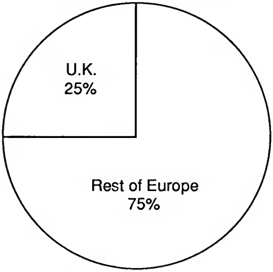
Significant contracts placed in 1989 in the U.K. included:

- VARITY with Data Networks PLC
- Plessey with Hoskyns
- DRG with Andersen Consulting
- Merseyside Health Authority with CSC
- DSS with EDS

In continental Europe the most interesting markets are France and Italy. The Benelux has a considerable level of activity. Germany is noted as a weak market for services generally, and particularly for FM.

EXHIBIT II-4

**The European Market—
Data Processing FM**



1989 = $800 Million

E

Positioning Parameters

In attempting to analyse the dynamics of the FM marketplace, this report has firstly drawn up what are considered to be the principal reasons for buying FM services from the user's perspective. These are listed in Exhibit II-5.

EXHIBIT II-5

Positioning Parameters

User Perspective

- Strategic value added
- Effectiveness
- Cost

In general, the purchase of any service raises the question of its strategic role in an organisation and the extent that it adds value in the business process. The question of added value is often difficult to answer and will involve personal perceptions. A related aspect for data processing is the extent to which the systems are used in the provision of the principal product or service that the organisation supplies. This related aspect seems to emerge as a clearer market positioning parameter from the perspective of the user.

Additionally, any potential service purchaser is likely to need to be persuaded of the effectiveness and cost savings of the proposed service. For the purposes of developing market positioning parameters it seems reasonable to combine these two related factors in the concept of FM attractiveness.

In the next section is a market positioning diagram using these two parameters.

F

FM Positioning—User Viewpoint

Exhibit II-6 shows the format of the market positioning diagram for FM from a user perspective. The degree to which IS is integrated into an organisation's functions is plotted on the x-axis; the attractiveness of FM to a user organisation is plotted on the y-axis.

It can also be seen in Exhibit II-6 that a certain industry sector pattern emerges from this analysis, although one must be careful to recognise the essential subjectivity of judging the positioning parameters.

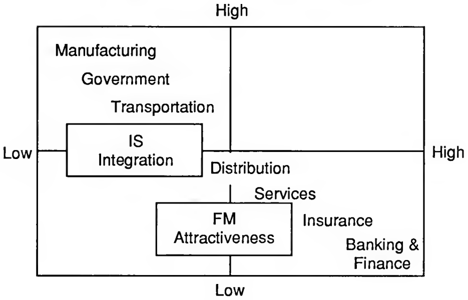
It must also be recognised that within each industry sector there is likely to exist considerable variation, dependent upon differing management styles and requirements—for example, the significance of front- and back-office systems to a financial institution.

The positioning diagram provides insights into the potential for network FM. The value-added concept, expressed on the diagram as the relative attractiveness of FM, places emphasis on the application and not on the commodities of computer processing power or network transmission. This emphasis implies a greater acceptability for users to do network FM, in contrast to DP FM.

The factors of cost and effectiveness will of course also affect the overall attractiveness of FM but are necessary conditions to the successful provision of any service.

EXHIBIT II-6

FM Positioning—User Viewpoint



G

Separation of DP Functions

A particular requirement for the outsourcing of a data processing operation is the need for it to be sufficiently separate that it is practical to hand responsibility to another organisation. A series of levels of separateness can be identified for data processing organisations; these are listed in Exhibit II-7.

This progression, first as an identifiable department and then as a completely separate subsidiary, is the classic model upon which many processing services (bureau) companies were developed. When the move is made to float the organisation off as a separate subsidiary, then automatically FM revenues are generated.

Additionally, one has also the joint ownership situation of closed user groups (CUGs). These are set up to serve very specific needs—for example, for interconnection of airline booking information in the case of SITA, or financial transaction messaging in the case of SWIFT. Typically INPUT has not included the revenues from these organisations in its assessment of the FM market.

EXHIBIT II-7

Separation of DP Functions

- FM
- CUG
- Subsidiary
- Division
- Department

The provision of discrete processing services also provides another development path towards FM as an organisation's data processing activity builds to a significant level.

In the case of network services sufficient separateness exists intrinsically for an organisation to be able to consider network FM as a practical opportunity at any stage of system development.

H

Summary of Arguments

One can thus summarise the position, from the prospective FM user's point of view, as a set of parameters or conditions that is likely to indicate the possibility that an FM approach might be contracted. The parameters are listed in Exhibit II-8.

- The target activity must be sufficiently separate for an FM solution to be practical.
- The vendor must as a rule be able to demonstrate superior knowledge and expertise in the chosen service area—in other words, superior effectiveness.
- The vendor must as a rule be able to demonstrate a cost advantage over the in-house solution.
- Finally FM must be attractive as an option; this particular adjective is used to imply that the user retains the unique strategic features that provide a value-added rationale.

EXHIBIT II-8

Summary of Arguments

- Separate/practical
- Superior knowledge/expertise
- Cost advantage
- Attractive

I

Different User Perspectives—DP

Increasingly, INPUT is aware of a trend in the large-scale systems market towards the separation of the computer systems platforms and the applications that run on them.

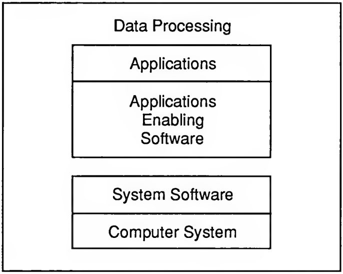
As large systems become more complex and more standardised, and as the user interface becomes simpler, this trend is likely to increase. The implication is that users will see less need to be involved in running the equipment platform, and this reduction applies to systems software as much as to hardware.

Exhibit II-9 is a diagrammatic representation of this divergence of user view for the data processing element of a computer system. Four levels of activity are identified:

- The basic computer equipment platform
- The operating system software required to provide the processing environment
- Applications enabling software, such as languages, system development tools and data base management systems.
- The applications software, either developed in-house or purchased as a product

EXHIBIT II-9

Different User Perspectives—DP



J

Different User Perspectives—Networks

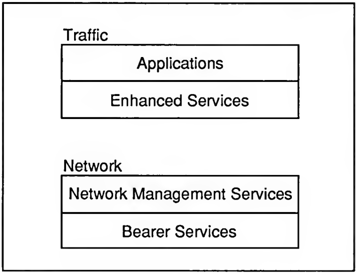
Analogous to the separation of functions for data processing shown in Exhibit II-9 is that for networks. Network separation is expressed diagrammatically in Exhibit II-10.

In the case of a network, the distinction is made between the network infrastructure and the traffic that passes through the network. There are four levels of activity in total:

- The basic platform consists of the bearer services, essentially the physical communications pipelines that are operated by the authorised telecommunications operator.
- Network management is the set of functions concerned with the control of the network itself and not the traffic that is transmitted over it.
- Enhanced Services add value in some way to the basic transmission activity—e.g., packet switching, store-and-forward error connection and protocol translation.
- The applications are concerned with the fundamental objective or purpose for which traffic is transmitted over the network—for example, Electronic Mail and Electronic Data Interchange.

EXHIBIT II-10

Different User Perspectives—Networks



K

System Aspects

From the vendor's perspective, the challenge of FM is to identify its position and its relationship with other service markets. The challenge is to identify aspects of the system that will provide positioning parameters for the FM market and throw light on the directions from which this business is developed.

Exhibit II-11 lists the principal positioning parameters identified from the vendor's perspective.

EXHIBIT II-11

Systems Aspects

- Equipment-related services
- Applications-related
  - Product
  - People
- In-house/service/outsourcing

Firstly, and building from the analysis described in sections H and I above, one can make a distinction between equipment- or system-related services and applications-related services. Within the latter, one can make a further distinction between product- and people-related services—i.e., generally between applications software products and professional services.

Secondly, one can analyse user expenditure on information systems into three categories: in-house expenditure, service expenditure and outsourcing.

The distinction between in-house and service expenditure is self-evident. INPUT has defined outsourcing to imply service expenditure where the user makes a deliberate and conscious decision to have an external vendor take responsibility for a major proportion of the organisation's information systems activity. It is this much-broader devolution of responsibility that gives rise to the difficulties in selling the FM concept.

This report has thus established two sets of criteria for positioning FM relative to other services. The two sets are developed in a map concept in the next two sections.

L

Market Positioning—DP

Using the identified positioning parameters defined in the previous section, INPUT has developed the map shown as Exhibit II-12. Across the horizontal axis we have the following three areas:

- The systems platform
- Applications-related services
- People-related services

Down the vertical axis are plotted these categories:

- In-house expenditure
- Discrete services
- Outsourcing

Into this matrix (or positioning map) one can place the market assessments for the size of the various elements that contribute to European data processing services business.

For the purposes of this analysis, INPUT has not included systems integration, or any strategic consultancy service under the outsourcing category. This was done in order to focus attention specifically on the FM area.

EXHIBIT II-12

Market Positioning Map—Data Processing

1989 DP European User Expenditures
($ Billions)

	Systems Platform	Applications Related	People Related	Total
In-House	Equipment 41		People 50	91
Discrete Services	System Software 9.2 Equipment Maintenance 11.2 Processing 0.5	Software Products 7.6 Processing 6.5	Prof. Services 14.8	49.8
Outsourcing (FM)	Facilities Management 0.6		Prof. Services 0.1	0.7

Total (rounded) $141 billion

It is very clear from this diagram that FM represents only a very small percentage of users' DP expenditures, around 0.6%. This low percentage serves to underpin the possibility of considerable growth potential.

Data Processing FM has originated from the adjacent markets of processing services and professional services. It is reasonable to classify professional services FM in the people-related column, but clearly FM itself can be a complete service covering the applications as well as the provision of the system platform resource.

M

Market Positioning—Networks

In Exhibit II-13 is an analysis of networks market revenues analogous to Exhibit II-12. Again FM represents only a small proportion of the total expenditure but is at 1.4%, a considerably higher proportion than for DP FM. There is also clearly a higher proportion, as would be expected, for service expenditure as opposed to in-house expenditure. In the case of networks, service expenditure basically means user expenditure on equipment.

EXHIBIT II-13

Market Positioning Map—Networks

1989 Data Network European User Expenditures
($ Billions)

	Systems Platform	Applications Related	People Related	Total
In-House	Equipment 9		People 4	13
Discrete Services	Equipment Maintenance 1.8 Data Comms. 7	Network Applications 0.3	Prof. Services 2.5	11.6
Outsourcing (FM)	Facilities Management 0.3			0.3

Total (rounded) $25 billion

In practice there are user expenditures on in-house people to manage and run networks, but the total is not significant for the purposes of this chart.

Comparison of Exhibit II-13 with Exhibit II-12 (for DP) implies a greater likelihood for networking FM to be acceptable as an outsourcing concept than DP FM. Significant factors in this argument are the existing penetration of FM in networks, the relative size of service expenditure and the perception that there is a lower emotional threshold for networks as opposed to DP.

N

Vendor Activity

Exhibit II-14 lists the principal entry points of FM vendors, the original market areas from which FM business has developed.

EXHIBIT II-14

Vendor Activity

- Origins
  - Processing services
  - Professional services
  - Network Services
- Network FM
  - BT
  - Mercury CDN
  - Sigmanet
  - GDN

A number of vendors, notably Hoskyns and SD-Scicon, have developed their FM business from a processing services (or bureau) operation. Also included in this category would be FM businesses such as IT-NET and PCT that have been created as management buyouts of a data processing division of a larger entity.

Vendors such as the Sema Group and Andersen Consulting seem to have been directed towards the FM opportunity by the needs of their base professional services activities. As their professional services businesses have been drawn towards systems integration and the requirement to

meet a greater range of service needs, so the need for operational support, and therefore FM, has arisen. EDS in particular has always stressed in its marketing a close coupling of systems integration services and operations.

Clearly there is a considerable interest in FM from the starting position of network services. British Telecom itself, Racal, and Extel are all examples.

The equipment vendors that have entered the market (most notably, IBM) could be classified as a totally distinct category. However, it should be noted that these vendors have substantial professional services revenues as well and, in the case of IBM, processing services and network services businesses.

The significant vendor activity observed in the specific area of network FM is also listed in Exhibit II-14. In addition to BT, Mercury, with its Corporate Data Network, is a potential FM competitor. Andersen Consulting's arrangement with Motorola Codex to offer network support under the name SigmaNet, and Racal's Government Data Network (GDN), are also important examples of Network FM.

O

Network FM Market Analysis

Exhibit II-15 illustrates INPUT's assessment of the complete FM market in Western Europe in 1989, both data processing FM and network FM. This analysis shows how the different categories of expenditure can be separately attributed to specific DP or network activity. Further it indicates the size of adjacent markets that could represent entry points to the FM business.

Overall in Western Europe INPUT has assessed the FM market at $800 million. INPUT attributes 85% to the DP category and 15% to the network category. INPUT believes in a network-specific FM market that to-date INPUT has not included in the basic FM market assessment because no DP is involved. An example of this expenditure would be the contract that SD-Scicon has with BP to manage its telecommunications network.

A further relevant market is network services—the provision of managed data network services that typically have not been considered FM but essentially provide an FM network function. Typically this market has developed from the provision of discrete services and not from a deliberate and clear decision to outsource the management of the network. The justification for the inclusion of managed data network services in an overall assessment of the FM market is that, as stated above, it essentially provides the same function. However, a similar argument can be

EXHIBIT II-15

Network FM Market Analysis (European User Expenditures, 1989)

	$ Millions		
	DP	Network	Total
Facilities Management	680	120	800
Network Specific FM	-	80	80
Network Services	-	80	80
Total	680	280	960

Data Communications Services	-	7,000	7,000
Network Applications	-	700	700
Maintenance	-	1,800	1,800

applied to the inclusion of processing services revenues and vendors (e.g., Datasolve and probably Hoskyns) who define their FM revenues to include some expenditure in this category.

Exhibit II-15 indicates that INPUT has identified a total FM market in Europe of nearly $1 billion in 1989, of which the network proportion amounts to around 30%.

Additionally, INPUT recognises some further adjacent markets, data communications services, network applications services (e.g., EDI and E-mail) and network equipment maintenance that could all represent market entry to the more closely defined outsourcing of network management.

P

European Analysis and Forecast

It is important to place the overall assessment of the FM outsourcing opportunity into the perspective of total user expenditures on information systems. The overall position is shown in Exhibit II-16.

EXHIBIT II-16

European Analysis and Forecast (User Expenditures)

DP	1989 ($ Billions)	CAGR (Percent)	1994 ($ Billions)
In-house	91	9	136
Service	50	15	102
FM	1	20	2

Network	1989 ($ Billions)	CAGR (Percent)	1994 ($ Billions)
In-house	13	10	21
Service	12	19	28
FM	0.3	40	2

Total	167	12	290

This exhibit builds on the market revenue analysis shown in Exhibit II-12 and II-13 but extends the analysis to show a forecast of market sizes for 1994.

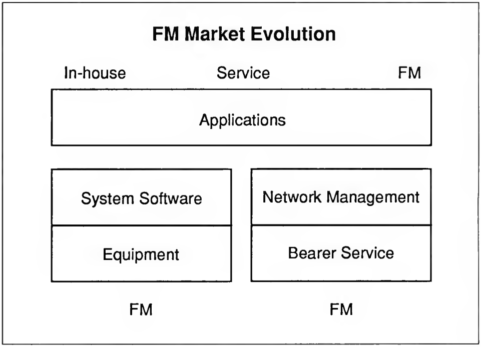
This analysis makes clear that although FM is expected to grow, for both DP and networks, at a significantly higher rate than for the market as a whole, FM nevertheless remains a relatively small proportion of overall IS expenditure. On these estimates of expected growth, the total FM market will only just exceed 1% of the total market by 1994. Even if these growth rates were doubled (i.e., 40% per annum for DP FM and 80% per annum for network FM), then FM would still represent under 3% of total user IS expenditure in 1994.

Q

Market Evolution

One of the key objectives of this study was to provide an opinion on the way that the FM market would evolve over the next few years. Exhibit II-17 represents graphically the basic FM trends observed by INPUT.

EXHIBIT II-17



FM Market Evolution

Firstly, INPUT expects the equipment platform and network to be seen as a separate identifiable function and consequently one more readily serviced by a third-party organisation. Increasingly the computer user is less interested in what goes on under the bonnet; increasingly the concern is the application and its contribution to the business.

This separation of functions clearly implies an opportunity for FM at the level of provision of computer and network facilities. The nature of wide area networks and the lack of the same tradition for in-house management in the DP area indicate a much greater readiness to accept network FM.

The area of network FM will be met by an array of adjacent or supporting services in addition to the central core of DP FM.

On the data processing side, the essential FM service is the provision of the computer facility—a MIPS power station. Associated with the station, and supporting it (both in-house and out-house) will be services such as:

- System software support
- Equipment maintenance
- Disaster recovery services

The network aspects will more readily be met by the provision of virtual networks—the pipelines through which the MIPS are supplied to the ultimate users. The more complete that network management function is, the less opportunity exists for independently provided services like equipment maintenance.

The separation of the equipment platform referred to above creates also the separately identifiable opportunity for the management of a user's applications. Clearly management of a user's application is a much more contentious area and thus much less likely than the operations side to fall prey to the arguments for FM.

For the applications the user will have the basic choice of:

- Providing the complete application support service in-house

- Purchasing discrete services to support an application essentially managed in-house

- Specifically contracting for the operation of the applications support to be provided on an FM basis

As with the facility platforms, there exist adjacent markets to the FM of applications, notably the maintenance of in-house-developed systems.

R

Conclusions—Market Approach

The central question posed for this research study was to determine whether the network FM and data processing FM markets were linked or separately accessible.

Exhibit II-18 lists the three basic options that follow logically from the analysis of the market evolution shown in Exhibit II-17. In principle the market can be approached from all three directions.

However, the applications route is probably the most difficult, since it is in this area that the most management resistance to the FM concept is likely to be met.

The most attractive route appears to be via the provision of other network services, notably the adjacent markets of:

- Data transmission services
- Equipment maintenance

EXHIBIT II-18

Conclusions—Market Approach

- Via computer system
- Via network
- Via applications

INPUT believes the network FM market is directly accessible and is not reliant on the DP FM entry point. Indeed, INPUT expects far greater penetration of the network market by FM contractors in percentage terms than for DP over the next five years. For 1994, INPUT is forecasting the network FM market—the majority of which is directly accessible by network-only vendors—to reach $1.6 billion (versus $2 billion for the comparable data processing FM market).

S

Summary

Exhibit II-19 lists the principal findings of this report.

EXHIBIT II-19

Summary

- Significant high-growth opportunity
- Network FM separately accessible
- Incremental development strategy advisable

The FM market in Europe and the U.K. offers a significant high-growth opportunity within the overall market for information systems. In particular, the network FM market is expected to grow at approximately twice the rate of the DP FM market (40% per annum v. 20% per annum).

In addition to this estimated end-user market, INPUT forecasts a substantial subcontracted third-party market for other FM vendors unwilling or lacking the skills to offer these network services effectively.

The network FM market is a separately accessible market. Probably the majority of it is more readily accessible in a direct fashion than through the DP route.

INPUT's recommendation is for an incremental development strategy in order to exploit the available commercial opportunity. The direction of attack should be from adjacent market areas, particularly data communications line charges and data communications equipment maintenance. These access routes avoid head-on FM resistance from management, as is typically experienced in the data processing area.

III

Market Analysis

III

Market Analysis

This chapter describes the general background to the development of outsourcing and the current status of the market.

A

Outsourcing

Not only can one observe the continuing growth of user expenditure overall on information systems (IS), but also the key business trends that are actively driving the need for more-complete IS solutions.

The key business trends relevant to this need in general, and of particular importance to networking, include the following:

- Business operations are becoming increasingly complex. With the increased complexity, there is a need to ensure that information flows between operational units as cost-effectively as possible.

- Organisational downsizing has necessitated that corporate staff be able to access needed information quickly. Decision-making information must be available at the time and place necessary to support decision-making processes.

- Organisations are competing increasingly in a global marketplace. With the increased global focus, integrated networks are the only effective means to ensure the timely, cost-effective delivery of information.

- For organisations to maintain their strategic position, a variety of decision-making data must be available quickly. Integrated networks are necessary to ensure the delivery of the information.

In addition to the changes taking place in business, a number of technological trends are causing organisations to consider integrating their networks more fully into the operational environment. The key technological trends are listed below.

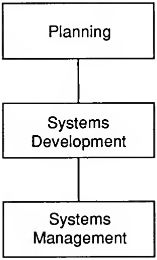
- Public networks are becoming more robust and application oriented. As digital services become more available, options for providing broader sets of services will become increasingly available.
- Virtual private and public networks will provide capabilities that will increase functionality and afford opportunities for greater control.
- Value-added networks, once oriented primarily to the needs of low-speed, infrequent users, are expanding to provide virtual capabilities, higher capacities and flexible services.
- Providers of PBXs are continuing to expand the capacity and flexibility of their equipment. They are focussing on providing equipment that can become a central point for integrating network services.
- The growing capacity of LANs is blurring the distinctions between local-area, wide-area and metropolitan-area networks.
- The enhanced capability of intelligent multiplexers has increased their importance as focal points for integrating network management functions. These enhancements include network management capabilities.
- The growth of relational data base systems is expanding the need for access to remote locations. With data bases becoming increasingly common on minis and PCs, the process of interconnecting systems becomes more complex.
- The resurgence of distributed processing and the growth of distributed data bases increases the need for networks among a variety of systems.
- The growing use of PCs and workstations, coupled with the growing need to access or share data, contributes to the need for networking and network integration.

All these influences are causing users to increasingly seek third-party support for data processing and network needs. Such support is generally referred to as outsourcing. In this study we have preferred to restrict the use of the word outsourcing to the supply of strategic services. This is admittedly a difficult distinction to pin down, but INPUT considers the distinction important. There exists a very different set of values and business ideas behind the decision to hire third-party assistance, for example, to contract programmers or operators, than behind the decision to contract out the management of the data processing activity.

The spectrum of potentially outsourced services is depicted in Exhibit III-1. At the planning level, strategic consulting services might be utilised. INPUT notices a trend for services organisations to become increasingly interested in providing consultancy on business planning as a precursor to involvement in further systems development services.

EXHIBIT III-1

The Spectrum of Services



Systems development comprises all systems design and building activity, and, of course, systems integration. Systems integration is clearly a key manifestation of outsourcing.

Systems management is a complete set of activities concerned with the operation of a system and its applications; therefore, it is principally composed of:

- DP facilities management
- Network services
- Software applications maintenance
- Equipment platform system maintenance
- Ancillary services, notably disaster recovery services

FM is the service channel that can be considered strategic because it involves handing over management responsibility to a third-party organisation.

Organisations are turning to third-party organisations to provide systems management services for a variety of reasons. Principally the reasons include:

- Scarcity of the staff with appropriate skills
- The increasing complexity of large computer systems and networks
- The need to implement information systems more quickly than might be possible in-house
- To reduce the risk of cost and time overruns

All of these factors are thrown into sharp relief by the increasing dependence on information systems by user organisations. Facilities management is thus an outsourcing service that has arisen to meet the user need for help in information services activity.

B

Market Status

On a world scale, the most developed FM market is in the United States. Most recently, intense interest has been focussed on the U.S. because of the market entry of IBM and such deals as EDS' contract to run Texas Air's System One airline reservation system.

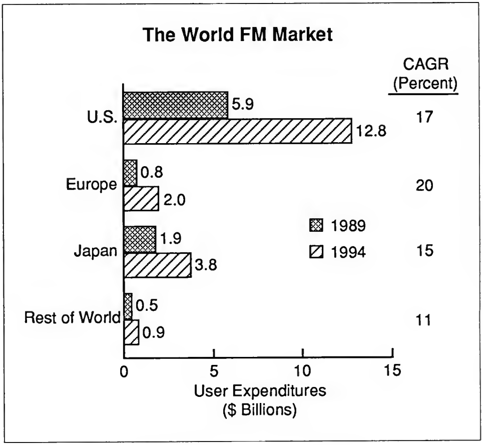
The scale of U.S. dominance of the world FM market is shown in Exhibit III-2. The exhibit analyses the global facilities management marketplace.

The acceptance of FM has been relatively restricted in Europe by the general caution exercised by buyers in respect to service solutions in comparison with those in the United States and in Japan.

However, 1989 marked something of a watershed year in the U.K., as a number of significant FM contracts placed the spotlight on this market sector:

- VARITY with Data Networks PLC
- PLESSEY with Hoskyns
- DRG with Andersen Consulting
- Merseyside Health with CSC
- DSS with EDS

EXHIBIT III-2

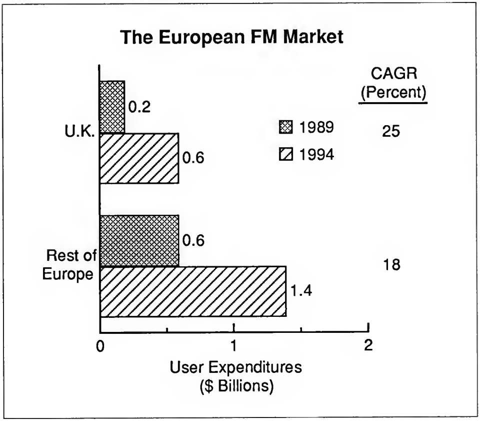


What was important about these contracts was not so much their size (in some cases not that significant) but the arrival of leading vendors such as Andersen and CSC into this area of the market.

On the continent, CSC has been active in the Benelux, but apart from this new activity the remainder of Europe has continued to view FM as primarily a response to legislation prohibiting or restricting computer ownership by government departments. Thus, there is considerable activity in Italy in this market; FINSIEL is the leading vendor. France is an important FM market with widespread awareness of this approach. Leading vendors in France are GSI, Telesystemes, GFI (SD-Scicon) and CISI. Germany is noted for its generally lower level of interest in services, particularly in outsourcing services like FM.

Exhibit III-3 shows the relative market position of the U.K. in comparison to the rest of Europe.

EXHIBIT III-3



IV

Market Dynamics

IV

Market Dynamics

Any market is subject to a wide variety of dynamics, user demand forces, supplier push factors and external influences. The purpose of this chapter is to examine these market dynamics in an attempt to discern the presence of fundamental patterns that will affect a vendor's approach to this market. This is done firstly from the vendor perspective and secondly from the user perspective.

A

The User Perspective

From the user's perspective the selection of the FM approach can be made from the classic make-or-buy decision parameters. Principally these are:

- What role does the activity have in the strategic value-added chain?
- Can it be done more effectively by purchasing from a third party?
- Can it be done at lower cost by purchasing from a third party?

1. The Role of the System

The first of these decision parameters is the most difficult to analyse and the most likely to raise emotional issues. This is certainly true of FM where arguments such as 'data processing is too important for us to hand to an outside organisation' are invoked in defence of the in-house solution.

Facilities management is an extreme manifestation of a general move towards the use of third-party services for information systems support because it implies the subcontracting of a considerable level of management responsibility. This relative extremity of user view explains some of the difficulties incurred in marketing these services and analysing the motivations for their purchase.

Other services are less threatening and consequently provide opportunities for approaching this market tangentially. This will be discussed in more detail in Section B below.

The other aspect of the strategic value-added contribution of information systems is the extent to which systems are used in the provision of the principal product or service that the organisation supplies and the degree to which they are integrated into an organisation's functions. As a parameter, the degree to which information systems are integrated into an organisation's functions poses fewer emotional or subjective questions than attempting to determine the strategic value of the systems.

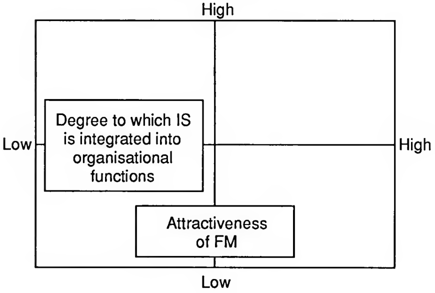
At one extreme, a computer service bureau would be unlikely to use FM for its computer systems since this is its essential business.

At the other extreme a government department could quite readily argue that the provision of data processing services, while absolutely essential to efficient operation, was not integral to the conduct of its mission, which might be providing social security services, for example.

This line of analysis has been developed in the form of a positioning diagram shown as Exhibit IV-1. The x-axis is the degree to which information systems (IS) are integrated into an organisation's function,

EXHIBIT IV-1

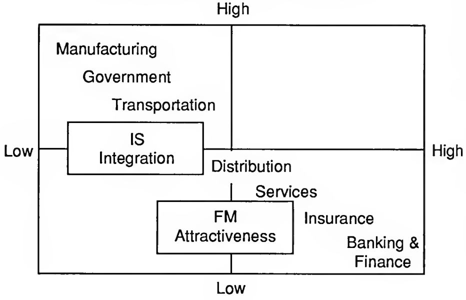
Facilities Management Positioning Map—User Viewpoint


High
Low
High
Degree to which IS is integrated into organisational functions
Attractiveness of FM
Low

and the y-axis is the relative attractiveness of FM. The relative attractiveness of FM could be interpreted as the degree to which information systems are considered (by the organisation's executives) to be part of the strategic value-added chain. Any such assessment is bound to be partly subjective; nevertheless, the pattern shown in Exhibit IV-2 emerges.

EXHIBIT IV-2

FM Positioning—User Viewpoint



Thus, for example, an organisation like Reuters would be positioned within the services sector at the bottom right-hand corner of the chart. A manufacturing organisation such as VARITY or Kodak is in the top-left segment. In between can be positioned various intermediate categories. Naturally there could also exist considerable variations within any one category, for example, back-office processing for a financial institution.

An analysis of the FM contracts listed in Appendix A broadly supports this classification, as can be seen from the percentage constitution listed below:

• Manufacturing	38%
• Government (including Health & Utilities)	27%
• Transportation	6%
• Distribution	2%
• Services	8%
• Insurance	8%
• Banking and Finance	6%
• Other	5%

A further level of complexity enters into the argument if one pursues the analysis of 'strategic value-added' to a further stage. For example, the extreme case is a computer service bureau contracting for FM services from a third party. In this particular instance, if the essential strategic added value was knowledge of and experience with payroll systems, then it could be argued that the computer operations could be carried out by a third party.

This analysis provides insight into the potential for network FM. The value-added concept places emphasis on the application and not on the commodities of computer processing power or network transmission. In this sense network FM appears to be more readily saleable than data processing FM because of the circumstances of having to purchase network transmission capacity, as opposed to the choice of in-house computer processing power.

If the analysis of the attractiveness of FM can be directly related to the strategic value-added component, which by definition must be the application and not the commodity component, then network FM will consistently score higher than DP FM.

The relative levels of current development of the network versus DP FM markets would have to be attributed to the relatively less developed size of the networking element.

2. Effectiveness and Cost

The other two FM decision parameters listed at the beginning of this section were effectiveness and cost. These are constant challenges to any service provider. If and when customers discover they can more effectively or more cheaply provide the service in-house, then the outsourcing arguments are seriously undermined.

The challenge to a computer services supplier is to stay ahead of the client in terms of effectiveness (application complexity could be an important factor) and cost.

The implication is that the services vendor needs to demonstrate that it has superior knowledge and expertise in a chosen services area.

3. Practicality

Finally, a service solution must be practical and sufficiently defined or identifiable within an organisation's functions that it can be subcontracted to a third party.

In terms of data processing and of FM in particular, a series of levels of separateness can be identified, as shown in Exhibit IV-3.

EXHIBIT IV-3

Levels of Separateness of Data Processing

- Facilities management
- Closed user group
- Subsidiary company
- Separate division
- DP department

Starting at the bottom is the conventional DP department. The first step in separating the DP function is the move to a separate division to provide processing services organised as a profit centre. This organisation can then be set up as a separate subsidiary company and legal entity. In this form other organisations could have an equity stake.

Beyond this level is the closed user group, whereby a number of organisations have banded together to form a company, usually for a very specific purpose. SWIFT and SITA are long-established examples; AMADEUS and GALILEO are relatively newer manifestations of such sub-FM organisations.

The most extreme form of separateness is FM in which ownership of the unit passes out of the hands of the user and the revenues generated are no longer captive to that organisation.

Another route towards FM is via the development of discrete processing services. As these services increase they will at some point become the dominant form of data processing for an organisation and thus could be considered an FM service for all practical purposes.

In terms of network services, it is clear that the condition of separateness for FM already generally exists in organisations.

4. Summary of Arguments

In reviewing the above set of conditions for FM from the user's viewpoint, INPUT has identified the following parameters (in reverse order to those described above):

- The target activity must be sufficiently separate for an FM solution to be practical.
- The vendor must as a rule be able to demonstrate superior knowledge and expertise in the chosen service area—that is, superior effectiveness.
- The vendor must as a rule be able to demonstrate a cost advantage over the in-house solution.
- Finally, FM must be attractive as an option. Attractive is used to imply that users still retain the unique strategic features of their own businesses and thus the value-added rationale.

The dividing line for this last condition is the application. Increasingly INPUT notices a trend in the large-scale systems market towards the separation of the computer system platform from the applications that run on it. Large systems are becoming more complex and require increasingly specialised skills in order to run efficiently. Additionally the applications interfaces are becoming relatively more standardised (SAA etc.).

The implication of these trends is that hardware and systems software operations are moving away (in the large-systems area) from the user domain. The same is true for networking, where the different management perspective for applications and the network are most clearly delineated—short-term user reactive applications support versus long-term investment payback for communications facilities. Exhibit IV-4 summarises these factors for both networks and computer systems.

EXHIBIT IV-4

Different User Perspectives

Data/ Traffic	Applications	Applications
	Applications Enabling Software	Enhanced Services
Facility	Operating Systems Software	Network Management
	Computer Equipment	Bearer Services

In the case of a network the distinction is made between the network infrastructure and the traffic that passes through the network. INPUT sees four levels of activity in total:

- The basic platform consists of the bearer services, essentially the physical communications pipelines operated by the authorised telecommunications operator.
- Network management is the set of functions concerned with the control of the network itself and not the traffic transmitted over it.
- Enhanced services are those that add value in some way to the basic transmission activity—e.g., packet switching, store and forward, error connection and protocol translation.

- The applications are concerned with the fundamental objective or purpose for which traffic is transmitted over the network—for example, electronic mail and electronic data interchange.

For the computer system, a similar analysis can be applied. The four levels are:

- The basic computer equipment platform

- The operating system software required to provide the processing environment

- Applications-enabling software, such as languages, system development tools and data base management systems

- The applications software, either developed in-house or purchased as a product

B

The Vendor Perspective

From the vendor's perspective the challenge of FM is to identify its overall positioning in relation to the service and thus to attempt to identify directions of approach for this opportunity.

In essence FM represents the provision of a combination of components as a service solution:

- Facilities
- Equipment
- Software
- People

Of these four, the last three are the most significant in terms of relating to other services. In any event, the provision of computer rooms and other facilities can be considered as part and parcel of providing the equipment platform.

The trend towards the separation of the equipment platform from the applications implies a separation of systems software products from applications software products in the above categorisation.

In attempting to identify the FM market it is also relevant to distinguish between discrete services—the purchase of a software product or a specific professional service—from the more complete or total service INPUT has termed outsourcing.

Thus INPUT has established two sets of positioning criteria for mapping the location of FM relative to other services. On the one hand, there is a distinction among services related to

- The systems platform (equipment-related services)
- Applications product services
- Professional services (people-related services)

On another dimension, there is the distinction among

- In-house expenditure
- Discrete services
- Outsourcing services

These positioning criteria are utilised to form a diagrammatic representation for the DP FM and network markets; these diagrams are shown as Exhibits IV-5 and IV-6.

EXHIBIT IV-5

Market Positioning Map—Data Processing

1989 DP European User Expenditures
($ Billions)

	Systems Platform	Applications Related	People Related	Total
In-House	Equipment 41		People 50	91
Discrete Services	System Software 9.2 Equipment Maintenance 11.2 Processing 0.5	Software Products 7.6 Processing 6.5	Prof. Services 14.8	49.8
Outsourcing (FM)	Facilities Management 0.6		Prof. Services 0.1	0.7

Total (rounded) $141 billion

EXHIBIT IV-6

Market Positioning Map—Networks

1989 Data Network European User Expenditures
($ Billions)

	Systems Platform		Applications Related		People Related		Total
In-House	Equipment	9			People	4	13
Discrete Services	Equipment Maintenance Data Comms.	1.8 7	Network Applications	0.3	Prof. Services	2.5	11.6
Outsourcing (FM)	Facilities Management 0.3						0.3

Total (rounded) $25 billion

These diagrams serve to underline two key points:

- Firstly, the extremely small scale of the FM market in relation to the overall level of user expenditure on information systems
- Secondly, the direction from which FM has largely arisen

The first of these points emphasises the optimism for relatively high growth in this sector. FM's current small size implies the need for only small shifts in spending patterns to achieve high growth.

The second point is that FM has been created as an extreme form of the service solution generated from other services, most notably processing services and professional services.

Vendors like CSC, Andersen Consulting, and the Sema Group have moved into FM from a professional services origin. SD-Scicon and Datasolve are from a processing services origin.

The entry of IBM and Businessland into the market (with the KODAK contract in the USA and most likely to be extended to Europe) marks a departure. This entry also raises a whole set of new issues concerning price competition and sales motivation in a market hitherto directed at cost reduction.

However, FM is an important area for British Telecom, since its oligopolistic position in respect of bearer services can be compared to that of IBM in relation to large mainframe computers.

V

Market Development

V

Market Development

Chapter III examined the origins of outsourcing, the range of services potentially required by users and the overall size of the facilities management market. Chapter IV then went on to examine the dynamics of the FM market in order to determine its fundamental nature and positioning. This chapter considers the vendor's approach to this market, and it analyzes user expenditures on information systems and services and the expected ways in which the market in general and FM in particular will evolve over the next five years.

A

Vendor Activity

FM is now a concept of some 20 years standing. It originated in the U.S. in the late 1960s and is generally associated with Ross Perot, who founded EDS. The original concept was designed to take away the concerns of running a computer operations centre, about which a company's management knew little. Characteristically FM is an option for the large organisation because here savings can most likely be made for the user, and profits derived for the supplier. Traditionally FM splits into two categories, a processing service in which the equipment is owned by the vendor, and a professional service in which the entire service is provided on equipment owned by the user.

Subsequently the convergence of computing and telecommunications technologies has had the effect (inter alia) of revitalising the concept of FM in Europe, where for the duration of FM's history it has remained very much a fringe activity.

This convergence has been brought about particularly by the improved efficiency and cost-effectiveness of data communications in Europe and has been accelerated by the ongoing process of the liberalisation of the telecommunications environment, a process that started in the U.K. but still has an enormous amount of ground to cover.

The fact that it is just as easy for a company to communicate with a third party's computer complex as with its own corporate data centre gives a whole new dimension of accessibility to the third-party contractor to offer as complete and effective a service as can be obtained from the internal information service function.

This equality of opportunity between the internal supplier and the external contractor is most complete for large, dispersed organisations with multidivisional structures and interests in many industries.

Hence, the large and very large companies in government and manufacturing are interesting prospects for the FM contractor with substantial resources.

The entrypoints into the FM business as it exists today can be traced to three adjacent market sectors:

- Processing services
- Professional services
- Network services

Vendors such as Hoskyns and SD-Scicon have developed their activities in this market fundamentally from a processing services direction. INPUT also includes in the processing services category FM businesses that have been developed along the lines of the model described in Exhibit IV-3. Examples of this type of vendor would be IT-Net and PCT, companies that have essentially emerged from the internal data processing departments of larger companies but have subsequently become independent companies. IT-Net was created out of the internal DP Department of Cadbury-Schweppes and PCT from P&O.

In the case of professional services, vendors appear to have been responding to user needs for wider and more comprehensive support services. The Sema Group (though the acquisition of Data Networks PLC), Andersen Consulting and CSC are examples of vendors that fall into this category. CSC, it must be noted, does have a long history of offering these types of services to the US federal government in the United States.

Systems Integration (SI) is an important influence on these professional services firms because the size and length of these projects has placed considerable pressure on vendors to take more responsibility and provide clients with more-comprehensive services. The development of FM services is an important adjunct to SI. This has been a significant feature of EDS's market approach, which has always stressed the close coupling of systems integration and FM services as part of a long-term (typically of the order of 5-7 years) commitment to supporting a client's information services needs.

Most recently the gaining of FM contracts by equipment manufacturers, notably IBM's contract with KODAK (and KODAK's parallel contract with Businessland to support its PC population), indicates entry to the market from possibly yet another direction. However, it should be remembered that IBM has substantial professional, processing and network services businesses in addition to an increasing concentration on the systems integration business.

INPUT has also observed considerable interest in the FM market from the adjacent market of network services. British Telecom, Racal and Extel are important examples in the United Kingdom.

Mercury Data Network Services offers its Corporate Data Network (Mercury CDN) in this market sector. The network supports, for example, all the networking supply and management for INS Ltd, the joint ICL/GEIS electronic data interchange services company. However, in this particular case the revenues generated would not be included in INPUT's market assessment since the income is not generated directly by the end user.

Andersen Consulting and Motorola Codex have recently (February 1990) announced the Sigma Net service in the United Kingdom. Sigma Net provides managed network services and was developed to provide a fully managed virtual network with customised systems integration for the user. Currently Sigma Net is available only in the U.K.

Racal's Government Data Network is a key example not only of network FM but also of network systems integration. Additionally Racal seems likely also to provide facilities management for the UK government's internal voice network. The voice network would generate £100 million per year in revenues over a ten-year period.

B

User Expenditures

In this study INPUT set out to identify the expenditure ratio between network and DP in FM contracts. Exhibit V-1 summarises the overall assessment of this market and analyses the different categories of expenditure between the DP and network functions.

Out of a total Western European FM market of $800 million in 1989, INPUT estimates that approximately 85% can be attributed to the DP category and 15% to the network category. In addition to the network FM revenues generated in this way, there also exist specific network services FM—for example, the revenues that BT generates in this area with no involvement in DP FM. SD-Scicon has a contract with BP to manage part of its telecommunications network; these revenues would also be categorised in the network FM segment. To date INPUT has not included these revenues in its overall published market assessments for FM.

EXHIBIT V-1

FM Market Analysis, 1989
(European User Expenditures, 1989)

	$ Millions		
	DP	Network	Total
Facilities Management	680	120	800
Network-Specific FM	-	80	80
Network Services	-	80	80
Total	680	280	960

In addition to the network activity, which is clearly denoted as FM, are managed data network services. Traditionally these have not been classified as FM but as a network service. The justification of this classification has been that these services have been generally purchased as discrete services and not through a deliberate and clear decision to outsource the management of a network function. Since there typically has not been an equivalent in-house-managed network facility, the decision to manage it through a third party has not arisen.

This situation is analagous to that of processing services on the data processing side and to the possible reclassification of revenues in the FM category when they represent a significant proportion of an organisation's data processing. The justification for including these revenues under the network FM heading is, as for DP, that they essentially provide the same function.

Exhibit V-1 shows that the total FM market in Europe in 1989 thus amounted to very nearly $1 billion. Approximately 70% is categorised as DP FM; the remaining 30% is network FM. Clearly over half of the network FM market is accessible independently of DP FM.

Additionally, INPUT recognises further adjacent markets that can also represent entry points to the network FM marketplace. These entry points are indicated in Exhibit V-2.

Network applications are services (such as EDI, E-mail and Electronic Funds Transfer) that, as referred to above in relation to INS and the Mercury CDN, imply the need for network management services.

EXHIBIT V-2

Network FM Adjacent Markets, 1989 (European User Expenditures)

	Market Size ($ Millions)
Network FM	280
Network Applications	700
Data Communications Services	7,000
Data Communications Equipment Maintenance	1,800

Additionally we can also consider the revenues generated directly for data communications and those for the maintenance of data communications equipment. These market areas, as can be seen from the estimates given in Exhibit V-2, dwarf those generated specifically in the area defined as network FM. Network FM barely represents 3% of the total revenues listed in this Exhibit.

The activities of companies such as Granada Computer Services in extending their equipment services to those of problems and facilities management point to the observation that these adjacent markets are viable entry points for network FM.

An overall analysis of end-user expenditures that summarises the analysis shown in the previous chapter but also indicates INPUT's five-year forecast is provided in Exhibit V-3. This analysis enables the expectation of growth for the FM market to be put into the context of total user expenditure.

This analysis thus clearly illustrates the significantly higher growth expectations for FM, in comparison to other sectors and the overall market, but also the extremely limited market penetration that these growth rates imply.

EXHIBIT V-3

European Data Processing and Network User Expenditure

	1989 ($ Billions)	CAGR (Percent)	1994 ($ Billions)
Data Processing			
In-house			
Equipment	41		62
People	50		74
Services			
System Software	9.2		20.1
Equipment Maintenance	11.2		14.6
Processing	7.0		8.8
Application Products	7.6		21.4
Professional Services	14.8		36.8
FM	0.8	20	2.0
Subtotal	141.6		239.7
Networks			
In-house			
Equipment	9		15
People	4		6
Services			
Equipment Maintenance	1.8		3.0
Data Communications	7		17
Network Applications	0.7		2.5
Professional Services	2.5		6.2
FM	0.3	40	1.6
Subtotal	25.3		51.2
Total (Rounded)	170		290

Certainly, as has already been noted, the small comparative size of the FM market indicates considerable potential and thus confidence in relatively high growth rates. These estimates of expected growth (20% per annum for DP FM and 40% per annum for network FM) indicate FM achieving just over 1% (1.2%) market share by 1994. Even if these growth rates were doubled, FM would still only represent around 3% of total user IS expenditure by 1994.

Further, it is important to note that network FM seems to represent, relative to its market sector, a greater opportunity than that for DP. The comparative market penetrations for each sector for 1989, and those forecast for 1994, are shown in Exhibit V-4.

EXHIBIT V-4

Comparative FM Sector Market Penetration

Sector	Percent* 1989	Percent* 1994
Data Processing	0.6	0.8
Network	1.2	3.0
Total	0.6	1.2

*Percents are rounded.

The greater ease of development of network FM, as opposed to DP FM, is supported by such factors as:

- The presence of large adjacent markets, data communications tariffs and equipment maintenance (especially) that can be readily exploited for market entry

- The lower level of management emotional involvement for data communications in comparison with data processing

C
Market Evolution

The way in which the FM market might evolve over the next five years can be forecast on the basis of the analysis of this market presented in the previous sections of this report. INPUT has attempted to summarise the principal points in Exhibit V-5.

EXHIBIT V-5

Network FM Market Analysis (European User Expenditures, 1989)

	$ Millions		
	DP	Network	Total
Facilities Management	680	120	800
Network Specific FM	-	80	80
Network Services	-	80	80
Total	680	280	960

Data Communications Services	-	7,000	7,000
Network Applications	-	700	700
Maintenance	-	1,800	1,800

INPUT anticipates that a major factor in the evolution of the FM market over the next five years will be an increasing tendency upon the part of users to view applications (including development and operation) as separate from the equipment and networks upon which the applications run. INPUT sees a trend toward decreasing interest in what goes on under the bonnet, and an increasing trend toward implementing applications that make a very specific and measurable contribution to the aims of the organisation.

The forces that are having this effect are, on the one hand, competitive pressures for efficiency in operation through computer and network systems use and, on the other, the growing complexity of computers and the increased reliance placed upon availability.

Thus, as illustrated in Exhibit V-5, there exists a growing opportunity to provide FM services at the level of computer and network facilities. As noted in the previous section, the nature of wide-area networks and the lack of the same tradition for in-house management in the DP area indicates a much greater readiness to accept network FM, as opposed to DP FM.

INPUT observes an array of supporting services proposed to users in this area—for example, extended field maintenance responsibilities, problems management services, independent systems software support etc. These services can either remain supportive to a main FM contractor or can be supplied directly to the end user as currently most of them are.

The data processing platform, and typically for FM we refer to large systems, can increasingly be considered as a 'MIPS power station' whose processing capability is provided to users through a communication pipeline.

INPUT thus expects to see considerable service development in this direction and subsidiary services (e.g., equipment maintenance) increasingly becoming embedded in more-comprehensive service packages, of which full FM is the most developed.

In terms of applications-oriented services, there will be considerably more resistance to the FM approach. Clearly this is a much more contentious area for management and therefore one much less likely to fall as easily into the hands of the FM vendor. Following the same logic as propounded earlier with regard to DP versus networks, one can expect applications more heavily network oriented to be more likely candidates for FM than those more processing oriented.

As is shown in Exhibit V-5, the user faces the choice for applications operation of

- Providing the complete application support service in-house.
- Purchasing discrete services to support the applications managed in-house.
- Specifically contracting for the operation of the applications to be provided on an FM basis.

INPUT is observing a trend towards the increasing provision of the maintenance of in-house-developed software by external organisations. The most obvious benefit is the freeing of scarce resources from the dominating maintenance activity onto new development projects. This is a key adjacent market that opens up the route to a more fully defined and comprehensive FM approach.

VI

Conclusions

VI

Conclusions

The central question posed for this research study was the determination of the most likely ways in which the network FM market could be approached. In this report we have therefore attempted to describe the relationship between network FM and DP FM to try to understand whether these markets were linked or separately accessible.

Additionally we have examined the expenditure ratio between DP and network FM and the likely development scenario for these markets over the next five years. An understanding of the current market position for FM has come from the market positioning maps described in Chapter IV. These maps enabled FM to be put into context against adjacent market opportunities. This analysis was also elaborated upon in Chapter V, where forecasts were given for the period to 1994.

From this analysis INPUT concludes that the network FM market can be approached in principle from three basic directions:

- Via the computer system
- Via the network
- Via the applications

The route through applications support is probably the most difficult and tenuous. INPUT has pointed out that, relatively, the more an application is network reliant rather than processing reliant, the more it is likely to involve complexities and operational difficulties that make external sourcing attractive. However, there is likely still to exist considerable management resistance to external sourcing, particularly if it performs a function highly integrated into an organisation's operations, as shown in Exhibit IV-1.

The most attractive route appears, not surprisingly, to be via the provision of other network services, the adjacent markets of:

- Data transmission services
- Equipment maintenance

Although the provision of data processing FM is increasingly drawing vendors into the network FM arena, INPUT has pointed out that it is an area with far greater traditions of in-house management and direction as potential obstacles to outsourcing. Indeed it could be very attractive to medium-sized DP FM vendors to subcontract this aspect of their value chain to a third-party (in effect a fourth-party) vendor. CSC's sale of its INFONET network implies a need for partners or third-party purchase of networking to support CSC's ambitions to grow an FM business in Europe.

The analysis developed in Chapters IV and Chapter V Section B indicated clearly that INPUT expects far greater penetration of the network market by FM contractors in percentage terms than that for DP over the next five years. Further, by 1994 the respective market sizes will have achieved some level of compatibility, $1.6 billion for network FM, versus approximately $2.0 billion for DP FM.

One can thus summarise the basic findings of this study in the following way:

- FM represents a significant high-growth opportunity within the domain of user expenditure on information systems. Indeed, there will exist considerable opportunities for meeting the need for subcontracted FM services, particularly in the area of network FM.

- The Network FM market is separately accessible; indeed, it is more readily accessible directly than via the data processing route.

- INPUT recommends that BT give serious consideration to the development of an incremental strategy in order to achieve further penetration of this market. This recommendation means that the direction should be from adjacent areas, particularly in BT's case from that of data communications line charges supply. Another important adjacent market from which this market can be readily addressed is network equipment maintenance. Head-on FM selling is more likely to meet management resistance, particularly from the DP community.

Appendixes

A

Appendix: U.K. FM Contracts

EXHIBIT A-1

U.K. Facilities Management Contracts—Andersen Consulting

Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
Greenall Whitley	*		*			
DRG	*	*	*	£4 M		IBM
AN Insurance Co.	*					
Merrill Lynch						

EXHIBIT A-2

U.K. Facilities Management Contracts—Data Networks PLC

Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
Varity				£7.2 M	5 yrs.	
Life Assoc. Scotland				£1.4 M	3 yrs.	
Works CC						IBM 4381
London Regional Transport				£6/yr		
Duport				£8/yr		

EXHIBIT A-3

U.K. Facilities Management Contracts—Datasolve

Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
Hertz	*				10 yrs.	
Birdseye Walls						Based on 4381
Thames TV						
CAMBS CC				£2 M		

EXHIBIT A-4

U.K. Facilities Management Contracts— EDS

Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
Shearson Lehman Hutton	*	*	*			
Unilever		Private Voice Network		£4 M	7 yrs.	
CAA						
National Bank						
DSS						

EXHIBIT A-5

U.K. Facilities Management Contracts—Hoskyns

Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
British Shipbuilders						
BEJAM				£2 M	2 yrs.	45 Staff
BREL (British Rail Engineering)				£4.2 M	3.5 yrs.	
Sphere Drake (Underwriting Management)					5 yrs.	
Imperial Tabacco						
Marley						
Greater Manchester Passenger Transport Executive						
Plessey						

EXHIBIT A-6

U.K. Facilities Management Contracts—Hoskyns

Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
Reckitt & Colman	*			£0.75 M		
Laing & Cruickshank	*			£1.2 M		DEC/VAX McDonnell Douglas
Bristol Water	*			£1 M	3 yrs.	Bull/DEC
RHM Grocery Div.						ICL 2960
Hoover						IBM
GLC (Central Computing)				£13 M		300 Staff
Rank Organisation						75 Staff

EXHIBIT A-7

U.K. Facilities Management Contracts— ISTEL

Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
Trent Health				£5 M		
Jaguar						
Rover						
Crown Life Assurance						

EXHIBIT A-8

U.K. Facilities Management Contracts— IT NET

Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
Birmingham Council				£5 M	5 yrs.	
Cadbury-Schweppes						
Premier Brands						

EXHIBIT A-9

U.K. Facilities Management Contracts— SD Scicon

Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
BP	*			£1 M		IBM
RAC				0.3		IBM
BP Chemicals		*				

EXHIBIT A-10

U.K. Facilities Management Contracts

Vendor Name Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
Computer Management (unnamed client)	*					
Sanderson: Vale of WH Council						
ICL: Chester Council				£.5 M	3 yrs.	
CFM: Wessex Health				£2 M+		IBM
Abbey Bus. Con.: Wessex Health (operations support only)						
PCL: (management buy-out from P & O) Post Office						

EXHIBIT A-11

U.K. Facilities Management Contracts

Vendor Name Client Name	Data Centre Operations	Network Operations & Management	Systems Development	Revenue per Annum	Duration	Other Comments
Comshare: Lord Chancellor's office				£2 M		
IMI: Pirelli				£1.7 M		
Telecom Capita: Berkshire CC				£2.4 M	5 yrs.	50 Staff
QA: West Midlands Health				£.75 M		
CSC: Merseyside Health						

B

Appendix: The Proposal

The Data Processing and Network FM Market

Objective

The overall objective of this study is to provide an assessment of the data processing (DP) and network facilities management (FM) market on an international scale.

Scope

Specifically, the study will aim to gather relevant facts and information concerning these markets in order to provide an assessment of:

- The relationship between network FM and DP FM to determine whether these are linked or separately accessible markets
- The likely evolution of this market (especially FM network) over the next five years
- The expenditure ratio between network and DP in FM contracts

The geographic coverage will place emphasis firstly on the UK market, secondly on Continental Europe and thirdly on a broad worldwide perspective.

Methodology

This study will be based on desk research using INPUT's library and information files and in particular on INPUT's ongoing research of computer services markets. INPUT will provide BT with an analysis of known FM contracts in the U.K. in the format already specified by BT. INPUT will also develop, in discussion with BT marketing, positioning graphics to aid the interpretation of the dynamics of the market.

Deliverable

INPUT will prepare a written document that will contain the data and information collected on the market, together with INPUT's evaluation and assessment of the specific points listed above under Scope. Also included in the study assignment will be an executive presentation of the study findings.

Professional Staffing

The study will be conducted personally by Mr. Peter Lines, INPUT's European Director of Research.

Professional Fee

The fee for this project as specified is £5,500 (excluding VAT but including all expenses). One half of the fee would be due payable on project acceptance, the remainder on project completion.

Authorisation

Authorisation of this project, The Data Processing and Network FM Market, can be effected by signing and returning a copy of this proposal to:

INPUT Ltd, Piccadilly House, 33/37 Regent Street, London SW1Y 4NF.

Authorised by:

BRITISH TELECOM	INPUT
Signature	Signature
Name	Name
Title	Title
Date	Date